Designation: E1102 – 91 (Reapproved 2002)

Standard Terminology Relating to Agricultural Chemical Application[1]

This standard is issued under the fixed designation E1102; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 The purpose of this terminology standard is to establish uniformity in terms used in the field of agricultural chemical application. Terms are adopted from related fields and where applicable from Definitions E609.

1.2 The terms are appropriate to any agricultural chemical application. Units in parenthesis following a definition are meant as typical and are not exhaustive of all units available for the term.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E609 Terminology Relating to Pesticides

3. Terminology

GENERAL CHEMICAL TERMS AND CHARACTERISTIC MEASUREMENTS

air flow rate—the flow rate of air, expressed in volume per relevant unit (ft^3/min, m^3/s, m^3/tree).

application rate—the amount of any material applied per unit treated:

active chemical rate—the amount of active ingredient (a.i.) applied per unit treated, expressed in terms of mass per relevant unit treated. (For area treatment, kg a.i./ha, lb a.i./A, or oz a.i./1000 ft. of row; for space application, mg a.i./m^3, or oz a.i./1000 ft^3; for individual units, kg a.i./plant or animal).

formulation rate—the amount of chemical formulation applied per unit treated, expressed in terms of mass or volume per relevant unit treated. (For area treatment, kg/ha, lb/A, or oz/1000 ft of row; for space application, mg/m^3, or oz/1000 ft^3; for individual units, kg/plant or animal).

spray rate—the amount of spray liquid emitted by an application unit during treatment, expressed in volume per unit treated. (For area treatment, L/ha, or gal/A; for space treatment, mL/m^3, or oz/1000 ft^3; for individual units, L/plant, mL/animal, or gal/tree).

cumulative droplet diameter ($D_{v.1}$ **and** $D_{v.9}$)—diameter of drop such that 10 % and 90 %, respectively, of the liquid volume is in drops of smaller diameter.

concentration—amount of the active ingredient contained in the chemical formulation expressed as a percent or mass per relevant unit basis.

deposit rate—the amount of any material deposited per unit area.

active chemical deposit rate—the amount of active ingredient deposited per unit area.

formulation deposit rate—the amount of formulation deposited per unit area.

spray deposit rate—the amount of spray liquid deposited per unit area. Mean deposit rate is the average amount of deposit over the entire spray swath. Effective spray deposit rate is the mean deposit from center to center of adjoining swaths.

diluent—a gas, liquid, or solid used to reduce the concentration of an active ingredient in the formulation or application of a pesticide (see Definitions E609).

drift—the movement of chemicals outside the intended target by air mass transport or diffusion.

airborne drift—the dispersion of chemical particles to the atmosphere outside the intended target.

particle drift deposits—the deposition of chemical particles outside the intended target.

vapor drift—the dispersion of vaporized chemical to the atmosphere and areas surrounding the target area during and following application.

formulation—the form in which a chemical is offered to the user.

mean droplet diameter ($\bar{D}_{pq}$)—is represented by the following:

$$\bar{D}_{pq}^{(p-q)} = \frac{\Sigma D_i^p}{\Sigma D_i^q} \quad (1)$$

where:

D_i = the diameter of the i^{th} particle,
ΣD_i^o = the total number of drops in the sample. Thus:
$\bar{D}_{10}$ = length mean diameter,
$\bar{D}_{20}$ = area mean diameter,

[1] These terminologies are under the jurisdiction of ASTM Committee E35 on Pesticides and Alternative Control Agents and is the direct responsibility of Subcommittee E35.22 on Pesticide Formulation and Application Systems.

Current edition approved March 15, 1991. Published May 1991. Originally published as E1102 – 86. Last previous edition E1102 – 86. DOI: 10.1520/E1102-91R02.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.